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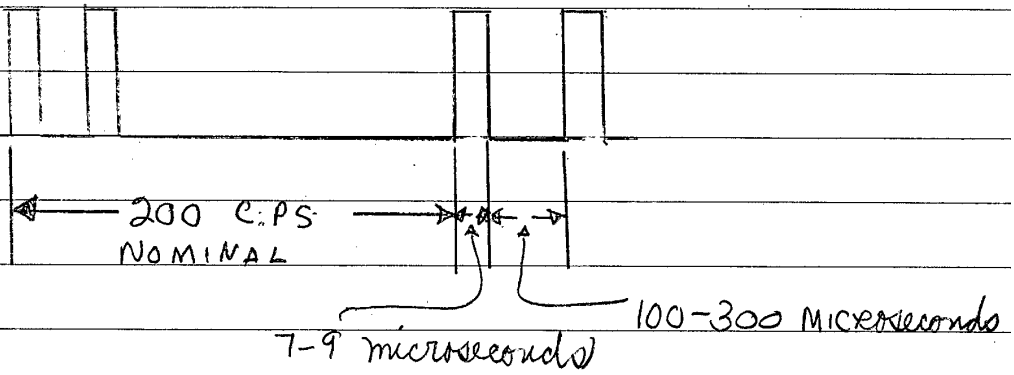
4-10-59

1. MK 220 Beacons

(a) #43, #17, and #6 were checked out and found to be operating satisfactorily. #43 had a broken lead in the vibrator supply circuit which was repaired.

The tests made on the beacons to determine their operating conditions are tabulated as follows;

(b) The observed beacon waveform closely approximates the manufacturers standard waveform which is sketched below.

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(c) MK 220 BEACON TEST RESULTS

| BEACON SERIAL NO. | BEACON FUNCTION OR ANTENNA LOAD | TRANSMIT FREQUENCY MC | DC INPUT POWER | | | OUTPUT PULSES | | | RF POWER OUTPUT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | PRF | PULSE SPACING | PULSE WIDTH | AVERAGE | | PEAK | |
| | | | VOLTS | AMPS | WATTS | CPS | MICROSECOND | MICROSECOND | I MA | MILLI WATTS | DUTY CYCLE | WATTS |
| #6 | VERTICAL ANTENNA | 213.5 | 6.3 | 1.19 | 7.50 | | | | | | | |
| THIS BEACON HAS NUMERAL #6 SCRATCHED ON TOP CASE | KEYED | — | 6.3 | 1.25 | 7.88 | | | | | | | |
| | ANTENNA LOAD RESISTOR(S) | — | 6.3 | .58 | 3.65 | 238 | 160 | 9 | 38 | 73.6 | 0.00428 | 17.2 |
| #17 | VERTICAL ANTENNA | 213.5 | 6.3 | .74 | 4.66 | | | | | | | |
| | KEYED | — | 6.3 | .92 | 5.52 | | | | | | | |
| | ANTENNA LOAD RESISTOR 51Ω | — | 6.3 | .60 | 3.78 | 220 | 180 | 7 | 38 | 73.6 | 0.0038 | 19.4 |
| #43 | VERTICAL ANTENNA | 213.5 | 6.3 | .70 | 4.31 | | | | | | | |
| | KEYED | — | 6.3 | .82 | 4.92 | | | | | | | |
| | ANTENNA LOAD RESISTOR 51 OHMS | — | 6.3 | .60 | 3.78 | 200 | 180 | 10 | 42 | 90.0 | .004 | 22.5 |

THE PEAK POWER CALCULATIONS ARE APPROXIMATE DUE TO ERROR IN MEASURING AVERAGE POWER [LONG LEADS AND LACK OF PROPER SHIELDING]

THE PEAK POWER OF BEACON SHOULD BE APPROXIMATELY 15 WATTS

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## 2. MK-220 Beacons (components)

So. Each beacon should have the following components:

(a) Oscillator in case
(b) Antenna, ground stake, and a 3 section counterpoise.
(c) Detector
(d) battery cable
(e) coax cable
(f) external keyer and cable

The beacons tested, have the following components

(a) Beacon # 43 has all components
(b) Beacon # 6 lacks external keyer
(c) Beacon # 17 lacks external keyer and cable

These items are not really needed as an alternate key is located in the beacon.

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